THE AMERICAN JOURNAL OF

OPHTHALMOLOGY.

VOL. XV. NOVEMBER, 1898. NO. 11.

ORIGINAL ARTICLES.

ADENOMA OF THE CILIARY BODY SPRINGING FROM THE PAR SCILIARIS RETINÆ. FOUR CASES.

[WITH MICRO-PHOTOGRAPHS.]

BY ADOLF ALT, M.D., ST. LOUIS, MO.

AMONG material for microscopical study which I obtained last winter from the dissecting room of the Beaumont Hospital Medical College were the two eyes of an old man who had died from croupous pneumonia. No previous history was obtainable, especially as regards his vision. All I could learn was, that while in the hospital he had not complained of his eyes.

I cut the anterior half of the right eye into æquatorial sections and found in the ciliary body, involving the root of one ciliary process, a microscopical tumor. I had never previously seen anything like it, and, as far as I knew, nothing similar had ever before been described. A little later on I examined the left eye of the same man and also cut the anterior half into æquatorial sections. To my astonishment I found in this eye, also, the same kind of tumor, involving only one ciliary process, but situated at its farthest projection into the interior of the eyeball which rendered it visible to the naked eye, although

it was very small. Otherwise, both eyes were, in general, normal.

The strange coincidence of two isolated tumors, each in a single ciliary process, in the two eyes of one and the same individual, led me to examine numerous similar sections of my collection, thinking that such tumors might on account of their smallness have, perhaps, escaped my eye on former examinations and might occur in a larger number of eyes. This research proved, however, unsuccessful.

A few months later I had occasion to remove the right eye of an elderly gentleman on account of a sarcoma of the conjunctiva which spread into the cornea. On examination I found in this eye such a tumor, microscopical in size and also involving but one ciliary process at its farthest projection into the eyeball. Except for the conjunctival tumor, this eye was otherwise perfectly normal.

About the same time I received parts of a number of pathological eyes through the kindness of a colleague. Among these was half of an eye enucleated on account of traumatic acute purulent panophthalmitis. In this eye, also, I found the same kind of tumor which lay in the root of one ciliary process.

This astonishing experience of finding in so short a period, and among comparatively few eyeballs examined by me during this time, this same kind of tumor in four eyes, is the more striking, since in all the many eyeballs which I have previously and since examined, I have seen nothing similar. Yet, not only in my own experience, but also in the recorded experience of the numerous workers in the field of the histo-pathology of the human eye this particular form of tumor has apparently so far not been met with.

Especially the fact, that one individual had such a tumor in either eye gave me the idea that these tumors might, perhaps, represent a small organ which, having existed in the eyes of animals of a lower order, had lost its function and disappeared in man in general, but might recur here and there; or, perhaps, that such an organ had existence and a certain function in the fœtal eye, but became atrophied later on and had, perhaps, remained persistent in the four eyes under consideration through adult life. Reiterated research through the literature at my disposal and my specimens of animals' and fœtal eyes of man, has, however, furnished me with no foundation

for such an assumption. The only structures which might, perhaps, be mentioned in this connection are the tumor-like pigmented excrescences springing from the pupillary edge of the iris of the horse. I must leave this question open for further research. The almost absolute similarity of the four tumors, under consideration, as regards the tissue involved as well as their histological origin and composition, is certainly very startling.

FIG. 1.

The first tumor of which I possess thirteen slides, which may indicate its thickness in an antero-posterior direction, lies at the base of a ciliary process, starting small in front of the pars non-plicata of the ciliary body, then widening out considerably, and ending again small at the apex of the ciliary body behind the root of the iris. While its posterior and anterior extremities have an oval or roundish outline, its central and thickest portion is rather bean-shaped and is almost lobulated. (See Fig. 1).

The pigmented epithelium layer surrounds it on all sides and this, together with the tissue of the ciliary process to which it is attached, is pressed aside. Outside of the pigmented

epithelium towards the interior of the eye, lies a continuous cover of one single layer of cells, the pars ciliaris retinæ.

The tumor itself consists of cells and a coagulated amorphous substance. The cells are apparently the same as those of the pars ciliaris retinæ. In parts these cells are unmistakably arranged in parallel rows around a very small central lumen, like glandular tubules, and these tubules form numerous convolutions. In other parts the amorphous substance intervenes

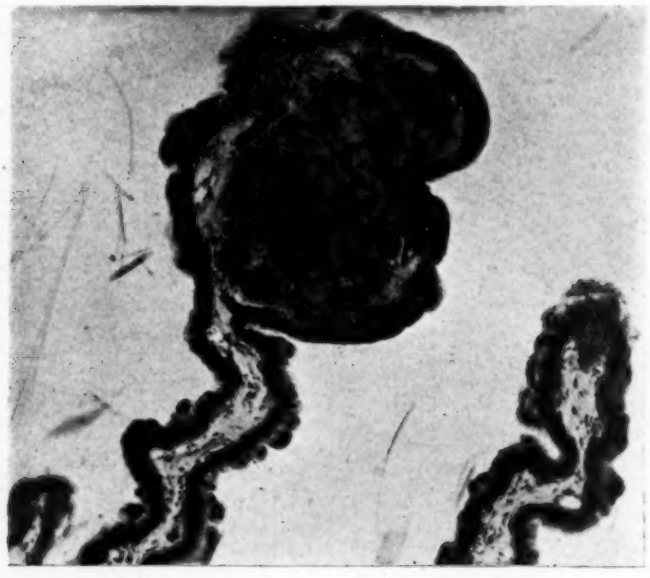

FIG. 2.

and presses these cells and cell tubules apart, sometimes to a very great extent. Many cells appear flattened by pressure. The whole picture at once suggests that which a gland represents when after closure of its efferent duct the process of secretion goes on and leads to gradual distention of its ducts and consequent flattening and atrophy of the secreting cells. Such compressed and flattened cells in this tumor often appear like spindles resembling connective tissue or myxomatous cells, but I think I am correct in the opinion that all cells constituting this tumor are of epithelial origin and character and are derived from the cells of the pars ciliaris retinæ.

This opinion is more particularly strengthened by a con-

dition found in the second tumor. This tumor occupies the very extremity of a single ciliary process and is considerably thinner than the former tumor in an antero-posterior direction. It does not reach the apex of the ciliary body forwards, and starts considerably in front of where the pars plicata begins. Like the first tumor it lies on one side of the tissue of the ciliary process which it involves and this tissue is pressed aside. While, however, in the first tumor the pigmented epithelium

FIG. 3.

was also pressed inwards by the tumor, in the present one this is not the case. (See Fig. 2). This second tumor is only covered over on the free surface by the pigmented epithelium and outside of this by the pars ciliaris retinæ, excepting in one place where there is a small gap in the pigmented epithelium, forming something like the hylus of a gland, and through this gap, the pars ciliaris retinæ has grown inward to form the tumor. What is left of the tissue of the ciliary process appears quite normal and contains blood vessels which are partly filled with blood. There is nowhere a separate tumor capsule and no zone of cell infiltration around the tumor as we see it in

cases of malignant newformation, in this or any of the four tumors.

The tumor consists of cell tubules and interposed coagulated amorphous substance just like the first one. The process of probable secretion and consequent distention is, however, much less developed.

The thickness of this tumor may be indicated by the fact that I have but nine slides of it.

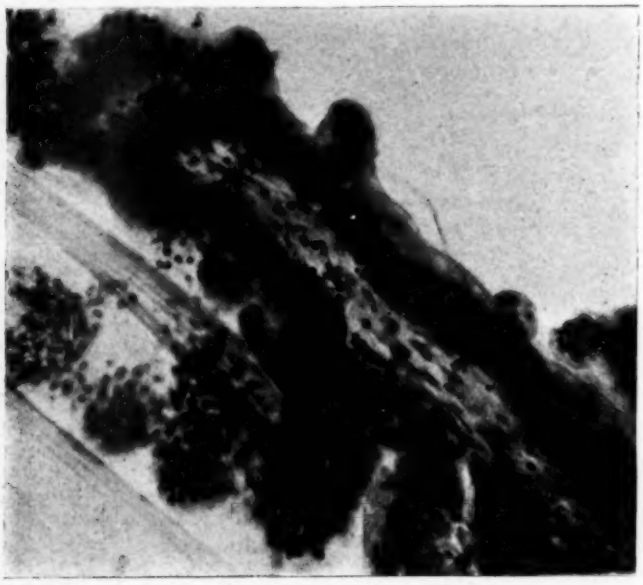

FIG. 4.

While, in a general way and aside from these tumors, both these eyeballs were apparently normal (except for a beginning cataract in the right one) they both show another peculiarity affecting the pars ciliaris retinæ throughout, which may or may not have some connection with the origin of these tumors which I have, however, met with in other eyes.

While in a general way the cells of this layer form the well-known cover of the ciliary body of one uniform row of cells, there are added to it innumerable bud-like projections springing from this layer towards the interior of the eyeball. (See Fig. 3). These bud-like projections consist of three or four and sometimes a great many more cells, clustered together

and presenting a rounded surface toward the interior of the eye. In quite a number of them there is a decided tendency to a parallel arrangement of the cells (see Fig. 4), and an apparent lumen, yet I have never found a real one. These buds, therefore, appear very much like the bleached so-called glands of the ciliary body of E. Treacher Collins, which are pegs of pigmented cells springing from the pigmented epithelium layer and growing outwards into the tissue of the ciliary body, while the buds, here described, are unpigmented, spring from the pars ciliaris retinæ and project free into the interior of the eye, the pigmented epithelium layer being normal in appearance.

FIG. 5.

The third tumor (see Fig. 5) is the smallest of the four and I have only six slides of it. Like the second tumor, it occupies almost the extremest tip of one cilary process. It also has a deep hylus where the cells of the pars ciliaris retinæ have grown inward. The tumor is like the first one, totally surrounded by a pigmented epithelium layer which with the tissue of the ciliary process is pressed aside. There is no break in the pigmented epithelium layer, it is simply doubled back. There is no zone of cell infiltration.

The histological elements of this tumor differ from the previous two in no particular, yet in this tumor the quantity of amorphous substance is even less than in the second one and consequently it appears comparatively much more solid. It is probably younger than the others.

The fourth tumor (see Fig. 6) is the largest of them all. It, also is confined to one ciliary process. I possess only 11 slides of this, but quite a number were lost. In this tumor the cells and cell cylinders form the smaller portion, the amorphous coagulated substance being much greater in quantity than in any of the

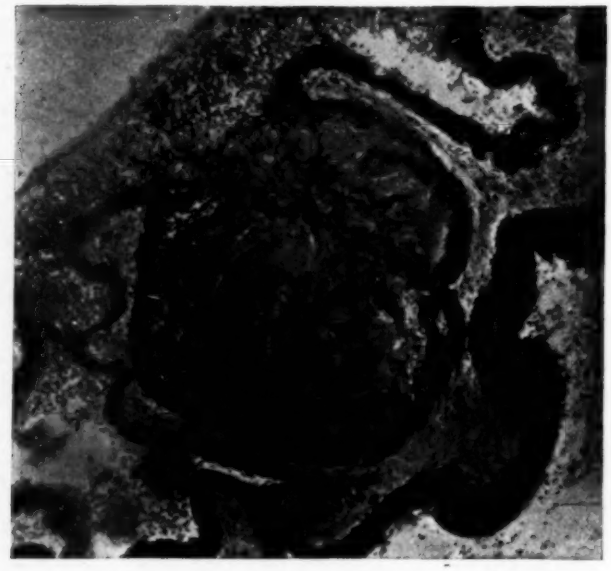

FIG. 6.

other tumors. In its composition and histological elements, it does not differ otherwise from the previous three tumors. Being situated in an eye suffering from purulent panophthalmitis, it shares to some extent, as might be expected, in this inflammatory process and numerous round cells are found in its peripheral parts, but this is not the zone of cell infiltration characteristic of malignancy.

I think from their structure, as here detailed, we must look upon these tumors as adenomata which take their origin from the layer of cells which is usually called the pars ciliaris

retinæ. That this layer, and with it the pigmented epithelium layer of the ciliary body, has a glandular function is now quite generally acknowledged. These two layers form the organ which secretes the aqueous humor.

The four tumors, here reported, show that the growth of the newformation takes place in two different ways. In three of them the tumor tissue simply pressed the neighboring pigmented epithelium layer in, together with the tissue of the ciliary process, thus forming a cup for itself, so to speak, the lining of which is the pigmented epithelium. In the remaining one the cells of the pars ciliaris retinæ have broken through the pigmented epithelium layer and expanded into the tumor in the tissue of the ciliary body and thus its outer surface is covered by the two layers as is the ciliary body in the norm, except at the small place where the perforation has taken place.

The amorphous coagulated substance which intervenes between the cells and is probably their secretion, is in the fourth tumor so plentiful and the cellular part in comparison so small, that if this process had gone on a little further, the tumor might have appeared like a large cyst. Cysts of the ciliary body have in a number of instances been described clinically. I know of no case in which a histological examination has been made. It is not impossible, that such a tumor, as here described, may, when seen throughout the pupil, look like a cyst and give rise to such a clinical diagnosis.

Other cyst-like changes are found in the ciliary body, especially at the root of the ciliary processes. To these I do not allude here.

A tumor-like newformation, consisting of innumerable unpigmented and pigmented epithelial cell tubules which had grown from the ciliary body into the interior of the eyeball within a cyclitic membrane, I had occasion to describe years ago. This was, as I thought and still think, simply an exaggerated form of tubular outgrowths from the ciliary body as is often met with in old cyclitic membranes. E. Treacher Collins simply called this newformation, described by me, an adenoma. In those days I thought that these cyclitic cell tubules originated in the pigmented epithelium layer and Collins says they are a pathological hypertrophy of what he described as "the glands of the ciliary body." As I have stated elsewhere (see

AMERICAN JOURNAL OF OPHTHALMOLOGY, Vol. XIII, p. 8). I am now of the opinion that these cyclitic tubular newformations originate in the cells of the pars ciliaris retinæ and that the pigmented epithelium cells are but secondarily affected. The pigmented cell pegs which, especially in the pars nonplicata of the ciliary body, are seen to grow outwards from the pigmented epithelium layer into the tissue of the ciliary body (E. Treacher Collins' glands) have surely nothing directly to do with these cell tubules which grow inward into a cyclitic membrane, as I have time and again seen the two co-existing without any signs of proliferation or hypertrophy in the pigmented cell pegs.

As I have stated before, I can find in the literature no case reported of this form of glandular tumor which I have here described. To be sure Collins, in his book, entitled "Researches Into the Anatomy and Pathology of the Eye" (page 68), has a chapter on adenoma and carcinoma of the ciliary body. Yet, his cases and those he refers to, were not what we have here seen. Besides his own two cases, he adduces my case, above referred to, one of Michel and one of Badal and Lagrange.

The first case of Collins' was a melanotic tumor springing from the ciliary processes invading the muscle and the root of the iris which he found in the eye of a woman which had twenty-five years previously been injured and become blind. The eye had been enucleated on account of a painful inflammation. This tumor was originally described as a sarcoma, but in bleached sections it was found to consist of cells which, especially in the part most pigmented, were arranged in parallel columns. Collins calls it a primary melanotic glandular carcinoma of the ciliary body.

The second tumor which he examined was also found in the eye of a woman. Sight had within six months become gradually destroyed and the eye had become painful and inflamed. The tumor sprang from the ciliary body and was anteriorly deeply pigmented, while its posterior part was unpigmented. The cells composing its central portions were very degenerate, much swollen and their outlines ill-defined. In the less degenerate peripheral parts the cells were of epithelial character and "arranged in a way suggestive of a glandular structure."

These two cases are evidently very unlike the ones I have described.

Badal and Lagrange (*Archives d'Ophtalmologie*, 1892, p. 143) found in one eye two whitish nodules in the ciliary body which were composed of regular tubules of one layer of cylindrical epithelial cells with a central lumen, furthermore, solid cell cylinders and atypical collections of epithelial cells. They called this a case of primary carcinoma of the ciliary body.

Michel (*Graefe's Archiv*, Vol. XXIV, p. 140) detailed a case in which a tumor started from the ciliary processes and had grown inward and forward until it touched the posterior surface of the iris. On its posterior surface it was covered by the pars ciliaris retinæ. In its tissue he found "connective tissue with endothelial proliferation and cells with a gland-like proliferation arrangement." He terms this tumor a mixed endothelial and epithelial carcinoma, but sees its origin in the cells of the pars ciliaris retinæ.

The two cases, the one of Michel and the other of Badal and Lagrange, seem to approach the four cases reported by me more nearly in structure and general character than do those of Collins. Yet, in all of these cases the tumor was malignant, or so considered, and these eyes had been removed on account of blindness and painful inflammation induced apparently by the presence of these tumors.

The four tumors reported by me differ materially from all of these. They were certainly not of a malignant character. They had in no case, so far as I know, rendered the eye which harbored them blind. Not one of them had caused a painful inflammation. The only one that shows signs of inflammation was located in an eye which suffered from a traumatic acute panophthalmitis. Histologically, my tumors undoubtedly started all from the cells of the pars ciliaris retinæ, involved only one ciliary process and were, therefore, microscopical in size, and show no tendency to rapid expansion and destruction of the neighboring tissues and no peripheral zone of cell infiltration. They are absolutely unpigmented and their glandular structure is well marked.

It seems, therefore, that they are instances of a form of tumor of the ciliary body not heretofore described, and I consider them as benign adenomata springing from the pars ciliaris retinæ, with the possibility that further observations may prove

their congenital origin and possibly the pre-existence of a true glandular organ in the ciliary processes in the eyes of some lower animal or, perhaps, in the fœtal eye of man.

NOTE ON THE PIGMENTED GLOBULAR EXCRESCENCES OF THE IRIS OF THE HORSE.

BY ADOLF ALT, M.D., ST. LOUIS, MO.

[WITH MICRO-PHOTOGRAPHS]

AFTER the previous paper had already been handed to the printer I found I had in my possession the anterior part of a horse's eye. As good luck would have it, the iris had two pigmented globular attachments to it at the pupillar margin.

E. T. Collins ("Researches Into the Anatomy and Pathology of the Eye," page 55) gives the drawing of a section of such a benign tumor attached to the horse's iris, and states that "in unbleached sections little can be made out of the arrangement or shape of the cells of which it is composed. It is very cavernous, and blood vessels are seen coursing through it, continued on from those in the stroma of the iris. Bleached sections show the mass to be made up of flattened epithelial cells, which line and form columns between numerous, variously sized, circular spaces."

I do not know whether anybody else has ever studied this excrescence more intrinsically, which, by the way, is of frequent occurrence among the horses of this country. I have no doubt, that this has been done, yet, in conjunction with the previous paper my findings may be of some interest to the readers of this Journal.

I have a number of microscopic slides of older date of such excrescences in my collection. In these the excrescence appears almost perfectly round. The excrescences, here under consideration, however (see Fig. 1), show no smooth and rounded outline, but a very irregular periphery on account of numerous smaller excrescences which spring from the larger and older one.

The excrescence is very deeply pigmented and it seems,

as if the pigmented layers of the iris had grown around the pupillary edge, forward into the anterior chamber and taken on their peculiar shape. In the unbleached section numerous round and oval spaces are seen, which are free from pigment and appear as cavities. Furthermore, a number of blood vessels are found within the dark pigmented tissue.

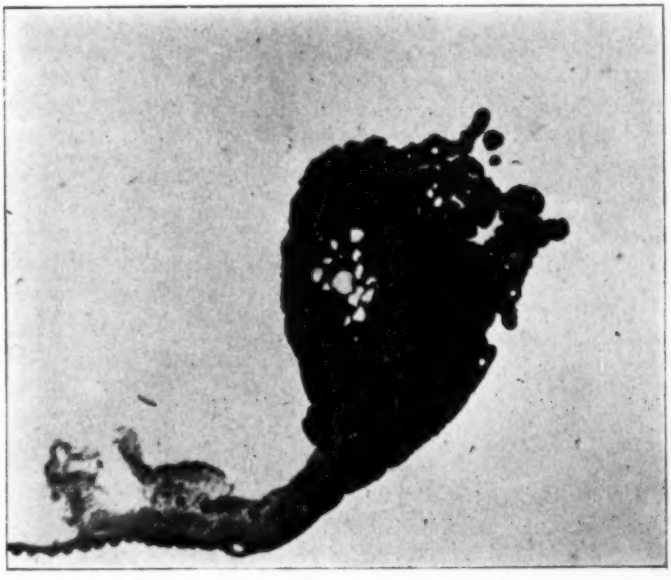

FIG. 1.

When the pigment is bleached out, the tumor is seen in reality to be an outgrowth of the retinal layers of the iris (see Fig. 2). The two layers grow evidently forward together to form the excrescence. Yet, in doing so, some of the iris tissue grows with them and forms a small quantity of connective tissue within the tumor in which the blood vessels are embedded. The tumor cells proper are evidently all epithelial and by far the largest part of the excrescence consists of them. Parallel rows of cells are frequently seen in the mass of cells, especially in the septa between the cyst-like cavities. In consequence, the excrescence has an undoubtedly glandular appearance and in so far and concerning its origin, it is similar to the benign glandular tumors in the ciliary body which I

have described in the previous paper. Even the cavities might be cited as analoga to the spaces filled with a coagulated substance as described in the adenomata of the ciliary body.

After all, however, it is very questionable whether in the iris excrescence of the horse we have to deal with a really glandular structure. The parallel rows of cells, I think, are

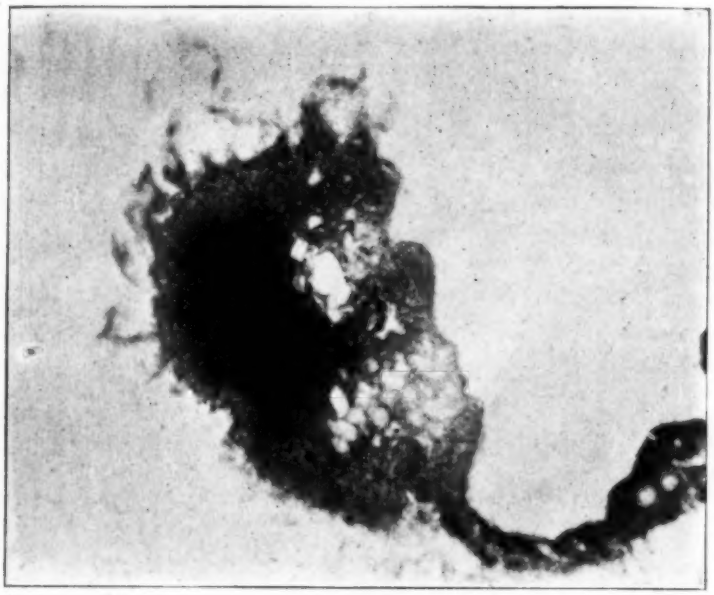

FIG. 2.

not an undoubted evidence of such a nature, as the two layers forming the pigment layer of the iris grow forward together and a parallelism of the cells must therefrom naturally follow.

Yet, this is, so far as I am aware, the only structure found in the eye of a lower animal, which in any way might be mentioned as something akin to the adenomata of the ciliary body, which I have found in the human eye.

THE REMOVAL OF CATARACT WITHOUT THE AID OF THE KNIFE.

BY J. ELLIS JENNINGS, M.D., ST. LOUIS, MO.,

SURGEON TO THE EYE DEPARTMENT OF THE ST. LOUIS EYE, EAR, NOSE AND THROAT HOSPITAL—OPHTHALMIC AND AURAL SURGEON TO THE ST. LOUIS MULLANPHY HOSPITAL.

SEVERAL months ago I received a communication from the Walker Pharmacal Company, of St. Louis, with the above startling sentence printed in large letters on the envelope. The inclosed circular went on to state that "no little interest was excited several years ago by the publishing of the history of a case by Dr. R. Mercer, of Port-of-Spain, in which was narrated the cure of a cataract of which the Doctor personally suffered, by the instillation into the eye of the fresh juice of Cineraria Maritima, a plant indigenous to that country. The disease first manifested itself by producing a slight impairment of vision, and subsequently turned out to be of the kind known as 'soft lenticular.' It gradually grew worse in both eyes, until 1882, fourteen years after the first appearance of the affection, when the left organ, which was the better of the two, was operated upon, but without success. As time went on, the Doctor's sight became still worse, until in February of 1888, he was strongly urged to try the juice of Cineraria Maritima by friends who related cases in illustration of its virtues. Having nothing to lose, as he was totally blind, he made a trial of the remedy, instilling two drops of the juice into each eye three times a day. On the fourth day, a faint glimmer of light was perceived by the right eye, and at the date of writing, April 13, 1888, Dr. Mercer could discern figures and even faces under a good light, as well as the hands of a watch." * * * "This narrative has every evidence of being given in perfect sincerity, and W. T. Thiselton Dyer, F.R.S., C.M.G., Director of the Royal Botanic Gardens, Kew, says, 'it seems to me to bear many intrinsic marks of accuracy.'"

"After the publication of this letter the drug was similarly employed by other medical men. One of these gave a patient a small quantity and was naturally very much surprised

when she asked him for a further supply, saying that since she had used the remedy her sight had gradually improved.

"Other instances of similar and even more astonishingly favorable results have been often reported since, and the reputation of the remedy seems to be spreading and asserting itself.

"Leading physicians and ophthalmologists are now using the preparation, imported for us, both in private and hospital practice, with generally good success."

After reading this circular, I gave the matter no further thought, until I received several letters of inquiry from subscribers of the Journal, as to the merits of the preparation. Thinking it might be of interest to our readers, I called at the office of the Walker Pharmacal Company, which, by the way, is located on the third floor of a building occupied by Luyties' Homœopathic Pharmacy, and introduced myself to the manager, who proved to be Mr. Luyties. On stating my business, he referred me to a young man, a graduate of a homœopathic medical college who, he said, had made a special study of the subject. I was shown numerous letters endorsing the drug, but none from any one of recognized standing. The following are samples of what the circular calls "*convincing evidence*":

"This makes the third bottle I have purchased for Mr. W. for cataract of right eye and it is doing wonders for him. He had lost the left eye, and the right eye was about gone also, but the remedy is restoring his sight."

"I am now using the third bottle and am fast gaining back my sight. The dark formation has burst, and I suppose in time will entirely disappear. Dr. P. also has examined my eye and says there is a decided change."

One lady, after using one drop in each eye night and morning, for a month, writes: "I can say now, with certainty, that my eyes are better. I took up our daily paper last night and without much effort could read it, and the type is not a clear black either. At one time I could not read it at all. Of course, I used my glasses."

"I received one (bottle) from you ten days ago, and the patient thinks it is helping him" Etc., etc.

I then stated that such reports, usually a mere statement of the patient, could not be relied upon and were of no value. As the circular states that "leading physicians and ophthal-

mologists were using the preparation, with generally good success," I asked to see a report from an ophthalmologist. They had none. I then asked if they would be willing to furnish me with a quantity of the drug so that I could test its value in a number of selected cases. After a consultation they refused to grant my request.

In conclusion, I would state, that so far as I could learn, there is no evidence to show that Cineraria Maritima is of any value as a curative agent in cataract, and from the action of the Walker Pharmacal Company, they evidently are not anxious to have the drug properly tested.

SIMULATION DE L'AMAUROSE AND DE L'AMBLYOPIE.

PAR S. BAUDRY,

Professeur à la Faculté de Médicine, Lille, France.

ABSTRACT BY LUCIEN HOWE, M.D., BUFFALO, N. Y.

IN European countries, where each able-bodied citizen must serve in the army, it is natural that various expedients should be resorted to by some to escape the loss of time and substance which such services require. For this purpose, one of the most common and successful methods is the simulation of imperfect vision in one eye or both. It is well known that certain pseudo-physicians gain their livelihood by giving systematic instructions to young men as to how to feign the imperfect sight which will enable them to escape military services. Recruits even go further, and occasionally mutilate the eye in order to escape duty, and the writer of this review has seen, within the last year, a Sicilian who allowed the lens of the right eye to be punctured with a needle, by one of these professional mutilators in order that the resulting imperfect vision might enable the man to escape the draft. While the simulation of imperfect vision is, therefore, of much greater importance in Europe than in this country, the subject is of interest to us, because of the similators who wish to obtain damages from individuals or companies, or are in search of pensions, or belong

to that class of perverts, hysterical or otherwise, who find a certain satisfaction in disease and the sympathy which it excites. It is especially from the medico-legal standpoint that monographs on the simulation of blindness are interesting, and why this one by Professor Baudry warrants special attention.

Although written originally to form a part of the "System of Diseases of the Eye," edited by Norris and Oliver, it has been published separately and seems worthy thus of particular mention.

Of course, unilateral amaurosis is the form usually feigned, and the writer devotes considerable space to the different methods for its detection, dwelling upon the objective signs—namely, the condition of the pupil and the direction of the visual axes. In considering the latter, interesting observations are made concerning the ability which certain persons have to produce a strabismus at will, but, as the writer very well observes, if the examination be prolonged, the patient is seldom able to maintain sufficiently this unnatural position of the visual axes.

Passing next to the subjective methods for detecting this form of the fraud, the writer takes up in order the procedure of Javal–Cuignet with its different modifications, the various contrivances which produce false images by means of mirrors, the tests made with glasses, spherical, cylindrical and prismatic, the various modifications of the stereoscope arranged to entrap the patient, and finally the tests with colored letters or other characters.

These are all inconclusive enough when an intelligent subject, well trained to deceive, insists that one eye is absolutely blind (amaurotic), but when he admits that there is still some vision remaining, the difficulties of detection are intensified to a considerable degree.

An excellent résumé is given of the various abnormal conditions in the refracting media which are occasionally overlooked, or which are difficult of detection even after attention has been called to them. But with proper attention to this, practically the same rules hold for detecting amblyopia as for an amaurosis.

An interesting condition, and one also difficult to detect, is an hysterical amaurosis or amblyopia following traumatism. The general practitioner has to deal often enough with cases

of so-called "railway shock" or other trouble in which, there being some real lesion, more or less marked, the resulting damage is greatly exaggerated by the hysterical condition of the patient.

Nearly every ophthalmologist must have seen these cases, where the imperfect vision is out of all proportion to the injury sustained. In their detection, as Baudry mentions, a single examination is seldom sufficient, but if enough time be allowed it is usually possible to trap the unwary patient by some of the well-known tests which show on what slight basis the claims really rest.

Finally, the detection of blindness feigned in both eyes is comparatively easy, and there are few persons sufficiently adroit to avoid their own condemnation, if sufficient time is allowed for suitable observation.

In general, this little pamphlet presents an excellent résumé of our knowledge of this subject, which is too often passed with but slight mention in our text-books, or even in larger treatises on the eye.

ADDITIONAL PAMPHLETS RECEIVED.

"Adeno-Carcinoma of the Nose," by M. Thorner, M.D.

"Eighth Annual Report of the New Orleans Eye, Ear, Nose and Throat Hospital."

"A Clinical Report on the Use of Argonin in Gonorrhœal Ophthalmia," by E. C. Ellett, M.D.

"The Advantage of Physical Education as a Prevention of Disease," by Ch. Dennison, M.D.

"The Determining Cause of the Site of Ulcers on the Nasal Septum," by E. C. Ellett, M.D.

"The Cure of Certain Chronic Diseases by Modern Methods," by W. D. Gentry, M.D.

"The Rational Care of the Eyes of the Newly-Born at and Immediately After Birth," by R. Sattler, M.D.

"Homonymous Torsion; A Position of the Retinal Meridians Hitherto Unrecognized," by E. P. Brewer, M.D.

"Surgery of the Pneumatic Sinuses of the Skull in Relation to Ophthalmic and Aural Surgery," by R. Sattler, M.D.

TRANSLATION.

CONCERNING THE OPEN-WOUND TREATMENT IN EYE OPERATIONS.

BY PROF. DR. HJORT, CHRISTIANIA.

[*Hirschberg's Centralblatt*, October, 1898.]

TRANSLATED BY ADOLF ALT, M.D., ST. LOUIS.

IN consequence of the communications of Dr. Praun and Professor Czermak, I am again obliged to say a few words concerning the open-wound treatment in eye operations.

My standpoint in this question is, that the "physiological toilette of an eye" is the main factor in an aseptic healing after eye operations, and I am gratified that a continually increasing number of operators seems to share in this operation. The recognition of the importance of the tear fluid and of the movements of the lids which, as experiments and clinical experiences have taught us, are necessary to keep the eye always clean, must of necessity lead us to remove everything which might hinder these efforts of nature and to consider every occluding bandage as dangerous and unnecessary. Knowing this, we have made quite a step forward.

There remains the "hollow bandage" which forms no obstacle to the physiological toilette of the eye whether air is admitted through it or not. Of late, the number of experimentors with it seems to be on the increase, but more especially with the wire gauze, since for theoretical reasons they do not accept my views gained by practical experience. I think, that in this they are wrong. While these operators are especially afraid of mechanical insults (from the hand) and therefore adopt mechanical means of protection, I regard these latter as obnoxious, especially when they exclude air and light, because moist heat acts unfavorably and because the admission of quiet, moderated light does not only not hurt eyes after cataract ex-

traction, but may even act beneficially. In support of this opinion I shall later on give a striking example. Furthermore, by preventing photophobia, the light shortens the period of after-treatment. I may add that I am afraid of any mechanical apparatus so close to the eye and the possibility of its slipping. We have often seen how the best applied binocular bandage would slip during the night and thus attract the hand to the head. I am satisfied that the wire gauze would disturb my sleep, even with healthy eyes. Such an appliance is in general the more out of place, the more complicated it is. The simplest one is usually the best, in all surgery.

Since my last publication on this subject I have met with nothing which could shake my trust in the open-wound treatment. Yet, twice it occurred that the eye operated was mechanically insulted.

The first case was that of a woman, aged 79 years. She was operated on without iridectomy February 14, 1898. For eight days everything went well. The pupil was round and central. Then the patient was out of bed and received a visit from her daughter who wanted to examine her vision, and did this so awkwardly that a corner of her shawl hit the operated eye, forcing the patient to withdraw her head, exclaiming, "Oh, that hurt!" There was a prolapse of the iris in the evening which was clipped at once and followed by the reposition of the iris edges. A chronic state of irritation resulted which but after a long time disappeared gradually.

This accident can not be mentioned against the open-wound treatment, because even had the eye been bandaged, the bandage would have been removed on the ninth day, and it is altogether impossible to protect patients against such accidents.

The other case was that of a laborer, aged 74 years, with a swollen cataract of the right eye. There was stillicidium but no blennorrhœa of the sac; the lower lid was without tone, the punctum was everted and the mucous membrane somewhat irritated. When 20 years old, he had a binocular eye affection accompanied by redness, pain and loss of vision (iritis?). A bacteriological examination of the conjunctival sac (agar) was made February 28. After thirty-six hours, numerous colonies had appeared 2 to 4 mm. in size, round and glistening, which consisted of diplococci with a tendency to

chain formation and which were stained by Gram. Besides, there were a number of punctiform colonies, looking like dew-drops, and consisting of thick bacilli, some of which were thicker at the ends. On account of the swelling of the lens and the narrow pupil, the cataract was extracted with iridectomy March 2, 1898. When the iris was excised, its uveal layer remained glued to the lens-capsule and was partially removed with the nucleus. Operation in other respects correct. In the night of March 4, the patient had severe pains in the eye and temple which were alleviated when he opened the eye in the morning and a stream of hot tears rolled down his cheek. On March 5, we noticed: Continued copious discharge of mucus, conjunctiva reddened; cornea not quite clear, a gray substance in the pupil; atropine does not act; vision reduced. In the evening there was chemosis, the lids slightly swollen and a gray exudation along the incision which, however, had disappeared next morning. Patient had pain during the night and related later on, that he had dreamed, a fly was sitting on his forehead. In trying to chase it, his hand touched his face and a pain in the eye woke him up. The wound was not found ruptured and the eye was red as before, the cornea diffusely steamy, the central part of the iris swollen, light perception only. A localized suppuration developed in the anterior part of the vitreous body, as was found upon enucleation of the eye, March 16.

This case is so extensively reported that it can be interpreted by all.

As is seen, an infectious inflammation developed, on the second day already, with pain in the night which in turn led to the movement of the hand toward the eye during the night following the third day. An occluding bandage would hardly have been borne, a moist antiseptic bandage could hardly have obviated the movement of the hand, on the other hand a wire-gauze or fenestrated plate might have done so. I do, however, not believe that the touch of the hand influenced the previous infectious inflammation in any manner.

This, among 118 extractions, is the only case in which I consider it doubtless that an infection through the incision took place. It was a complicated case in which the iris was easily irritated and according to my usual principles, this eye should not have been operated on at all, because

the drainage of the tears was bad, the mucous membrane unclean, and the fellow eye could read. I repent having given way to his wish to have it operated on.

I want to emphasize at least that not the open-wound treatment, but the inflammation was the cause of the external insult.

I want to add a few cases of open-wound treatment.

I. J., a woman, aged 67 years, was operated on without iridectomy on February 14, 1898. Immediately after the lens was delivered, a large quantity of vitreous body prolapsed, the wound gaped and soon a stream of bright red blood ran down the cheek. The patient (which I had not known beforehand) was a hæmophile and some years previously had come near dying from the extraction of a tooth. There was also arteriosclerosis. In the following days blood oozed from the wound which contained a plug of bloody vitreous body, but stopped finally on the application of ized compresses. The patient suffered much from lancinating pains in the eye, which remained red. The corneal flap, bent forward, remained dim, yet no inflammation took place; all this time the lids did not swell. The eye was lost, of course, yet the patient had suffered so much through the pains due to the intra-ocular hæmorrhage, that I could not induce myself to propose immediate enucleation, which, too, would probably have been refused. Only three weeks later, when the conditions had again been for some days supportable and the eyeball moved freely, while the corneal flap was still turned over and the wound gaping and when the patient was convinced that the operation did not have the desired result, he consented to the enucleation. This was made March 7 in narcosis. During this operation the slight pressure of the speculum caused a stream of bright red blood to flow. The after-hæmorrhage was so copious, that the orbit had to be tampooned and a compressive bandage had to be applied for three days; after that everything went well. When the eyeball, hardened in formol, was opened the retina was found totally detached, the globe in the anterior part collapsed, otherwise of normal shape and size, since a firm blood clot surrounded the detached retina and another one lay between choroid and sclerotic. Not a trace of suppuration, no necrosis of the corneal flap.

As an indication for a monoculus (binoculus is never ap-

plied) I regard a superficial, fresh, painful loss of corneal substance, if the conjunctiva is moderately clean. I, therefore, apply this form of bandage to ambulant patients.

Another illustration of open-wound treatment is the following case. The patient, last operated upon, a laborer, aged 65 years, was very hard of hearing, which is always a disagreeable complication, because it is difficult to guide the patient during the operation. Simple extraction June 3. Operation typical in all its parts. During the night the patient had pain in the back so that he had to be turned to the side and two days later the heat of the bed became so unbearable to him that he had to stay out of it for two or three hours in the fore- and afternoon. June 6, the eye was free from irritation, dry mucus on the skin of the lower lid; cornea and iris absolutely normal. On the day after the operation the pupil was slightly drawn towards the wound, pear-shaped; yesterday more central, slightly oval; to-day perfectly round, central, very mobile. No instillation; the upper lid was not touched. This spontaneous and complete return of the pupil to the norm was astonishing and is undoubtedly explained by the miotic influence of the sun. Since there was no photophobia and the room faced south, the sun entered freely. Four days after the operation the nurse placed him into a heavy reclining chair with the back to the window. Left alone, the patient turned the chair in order to see the people passing by. No irritation occurred, the pupil remained in place and fourteen days after the operation the patient was discharged.

It seems to me that among others these examples speak plainly in favor of the open-wound treatment. With this method it is all-important, according to my opinion, to see that the conjunctiva is clean, the tear drainage effective, and that before extractions all the lashes are removed by epilation.

SOCIETY PROCEEDINGS.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

H. R. Swanzy, F.R C.S.I., President, in the Chair.

Thursday, October 20, 1898.

Glioma of the Optic Nerve. — This paper was read by Messrs. J. F. Bullar and Devereaux Marshall. The case upon which it was based was that of a woman, aged 37 years, who noticed nothing wrong until 1889, when the left eye became more prominent than natural. It continued to become more and more pushed forwards until 1895, when Mr. Bullar operated, and removed the tumor with the eyeball attached. Immediately behind the globe the optic nerve was of normal size for a distance of 15 mm. It there formed a pear-shaped swelling 50 mm. long and 20 mm wide. A cyst-like cavity was found inside this, which contained straw-colored fluid. On opening the interior was found to be rough and vascular, and had a fatty appearance. The tumor was encapsulated. The optic nerve was completely lost as soon as it entered the tumor, and it was not again seen at the posterior part, as the growth extended at least as far as the optic foramen, and was cut across behind. The patient did quite well, and had since got married, and was in good health. The tumor was proved by microscopic examination to have originated in the neuroglia, the authors have therefore termed it a glioma of the nerve. The eye was normal. In the literature on the subject 130 casse of growths of the optic nerve were recorded, and the results of these showed that the tumors were of slow growth, but should be classed as malignant, as they were liable to extend into the brain, although metastases had not been found in any case. The question of growths of all sorts found in the optic nerve was discussed, and although the different terms applied to them were legion, yet the authors were strongly of opinion

that the majority of them would fall into three groups: (1) Those originating in the neuroglia, which should be termed "gliomata"; (2) those originating in the dural sheath, "sarcomata"; and (3) those originating in the pial sheath, "endotheliomata." Mr. Bullar added that there had been no difficulty in removing the tumor. As soon as the conjunctival sac was opened the finger passed easily into the orbit, and the tumor was easily defined; it was not necessary to clean out the orbit. The posterior section of the growth was made as close to the apex of the orbit as possible, but the tumor was cut through, so that some portion of it must have been left behind. It would have been quite easy to remove the whole of it, leaving the eye behind; but in the stretched condition of all the parts he had not thought this advisable.

THE PRESIDENT remarked on the rarity of tumors of the optic nerve. He only remembered seeing one case.

MR. TREACHER COLLINS commented on the great variety of names which had been given to this form of tumor. He thought the best classification was the anatomical one—those originating in the sheaths of the nerve and those starting in the nerve itself. The optic nerve was a band of prolongation of the brain substance, and gliomata of the optic nerve resembled those of the brain in structure rather than those of the retina.

The Tension of the Eye in Irido-Cyclitis.—This communication, which was presented by CAPTAIN H. HERBERT, I.M.S., was based on observations of 144 eyes affected with irido-cyclitis. In the majority of attacks, more especially in the milder attacks, the tension was, as in simple hyperæmia of the iris and ciliary body, reduced; the reduction lasting, as far as the evidence went, at least as long as any ciliary injection remained. In other cases a period of high tension of very variable duration came on. The high tension appeared to be due to blockage of the normal outlets from the anterior chamber, and the eyes chiefly affected were (1) those very severely attacked, with copious exudation, and (2) eyes perhaps lightly attacked but predisposed to glaucoma, as shown by shallow anterior chamber in the sound fellow eye and by more or less advanced age of the patient. In these high tension cases the anterior chamber was deepened and the pupil slightly dilated. In the

most intense inflammations the plus tension rapidly gave way to a softening, which might be permanent and which indicated atrophy of the ciliary body. The mild attacks, which were little removed from primary subacute glaucoma, were of interest because of difficulties in diagnosis and in treatment. There were no grounds for attributing high tension to cyclitis as distinguished from iritis.

MR. PRIESTLEY SMITH said that the principles enunciated by Captain Herbert were now generally accepted. There were two processes, mutually antagonistic, concerned in the regulation of tension in irido-cyclitis; one was the suppression of secretion, reducing the tension, the other was the formation of an albuminous exudation hindering filtration and raising the tension. He had been glad to hear in this paper of the value of the tonometer he had introduced; after longer experience he thought it very valuable if its limitations were recognized. He had made some experiments on tension some years ago, in which a perfectly limpid albuminous fluid obtained from a serous cavity had been injected into one eye of a cadaver and normal saline solution into the other. In the former the tension was raised, in the latter it was not raised, showing that albuminous fluids will not filter through animal membranes.

Card Specimens.—The following were the card specimens: MR. R. M. GUNN—Case of Retinal Disease. MR. R. D. BATTEN—Superficial Central Choroiditis.

OPHTHALMIC DIGEST.

BY J. ELLIS JENNINGS, M.D.,

ST. LOUIS, MO.

METASTATIC CARCINOMA OF THE EYEBALL.

In an interesting article on this subject published in "The Royal London Ophthalmic Hospital Reports," 1897, C. Devereaux Marshall records two cases and gives an abstract of twenty-two others already published. Of the twenty-four,

eighteen were females and five were males, while in one case the clinical history was entirely lost. Most of these cases occurred in middle-aged persons, the youngest 28, and the two oldest 57 years of age. The tension of these eyes forms an interesting feature. It was normal in eleven cases, plus in seven cases, minus in four cases, and not recorded in eight cases. Total, thirty eyes for twenty-four persons. Here we see that the usual condition is to have normal tension and the least common minus tension. These cases differ in this respect from the ordinary sarcomata which affect the choroid. The difference, however, is not surprising when one considers the anatomical peculiarities of these tumors. These growths are nearly always flat and thin, and consequently they are less likely to lead to the pushing forwards of the lens and iris, and to the blocking of the angle of the anterior chamber, as is so notably the case in eyes containing choroidal growths far back. With regard to the position of the primary growth, it is at once apparent that a large proportion of the patients suffered from carcinoma of the breast; of the twenty-four cases, seventeen suffered from this disease, one being a male, the rest females. One male and one female suffered from primary cancer of the lung and pleura. The three who had cancer of the stomach were all males. The usual span of life in these cases is from one month to two years.

One of the most marked features concerning the dissemination of carcinomata is the readiness with which the lymphatic system becomes involved. The lymphatic glands in the neighborhood of the primary growth are practically always the first to become affected, and it is frequently only at a late stage that there is positive evidence of the vascular system having become the means of carrying the tumor cells to distant parts of the body. As the eye can only become involved through the vascular system, one would consequently expect that this organ would but rarely become affected, and that only in the later stage of the disease. This is exactly what we find in the majority of cases.

If, therefore, there is reason to suspect the presence of a tumor in the eye of a patient suffering from carcinoma elsewhere, it should at least put us on the lookout for confirmatory evidence of metastasis in other parts of the body.

As far as treatment is concerned, it can obviously be only

palliative, as it is hopeless to imagine that internal organs are unaffected if the eye is already involved. On the other hand, there is absolutely no reason why such eyes should not be removed; they are liable to attacks of acute glaucoma, and may, if they ulcerate, become extremely painful, whereas, excision at an early stage removes at least one source of discomfort, while the patient loses but a useless organ.

A NOTE ON A METHOD OF OPERATING FOR ECTROPION OF THE LOWER EYELID.

The following operative procedures for the cure of ectropion of the lower lid are recommended by Dr. Argyll Robertson (*British Medical Journal*, June 11, 1898). An incision is made through the skin of the outer third of the lower lid, parallel to and about 2 mm. distant from its margin. When the incision has been carried as far as the outer canthus the knife is directed a little more upward, and the incision continued for about half an inch. It is then carried horizontally outward for about 6 mm., and lastly, downward and inward, nearly parallel to the upward incision, but diverging a little from it below, for the distance of about an inch and a quarter. The flap of skin thus outlined is then dissected from subjacent parts and reflected back. Next a suitable V-shaped portion of the whole substance of the lower lid is removed at a little distance (say 3 mm.) from the outer canthus. The "strap" of the skin which has been reflected is now drawn upward and outward till the edge of the lid is brought up to its natural position, and the skin which it overlaps is then outlined by bringing the knife along the edge of the strap, and the portion thus outlined dissected off. Lastly, the strap is then replaced and fixed in position by several sutures. It is advisable not to remove a large V-shaped portion of the lid at first, as a little more can easily be snipped away if on drawing the lid into position by means of the strap, a puckering of the edge of the lid indicates that too little has been removed.

This operation is particularly useful in senile ectropion or eversion of the lid from long-continued palpebral conjunctivitis, but it may be advantageously employed in other forms of ectropion also. The chief advantages found in this method of operating are: (1) That the exact amount of lid tissue that

should be removed is easily ascertained; (2) that by means of the strap of skin very efficient and permanent traction on the lower lid is obtained, thus bringing it and fixing it in proper position. Instead of removing the skin that lies under the strap, where it is drawn up so as to bring the lid into position, a small portion of the extremity of the strap might be cut off and the effect would be similar. But the author prefers the method described, giving, as it does, a larger surface on which to fix the strap. The author has only had the opportunity of performing this operation on three cases, but in all (and one was a very severe and complicated traumatic case), the result was excellent.

PAMPHLETS RECEIVED.

"Strabismus," by F. B. Tiffany, M.D.

"A Case of Tenonitis," by E. C. Ellett, M.D.

"Acute Inflammation of the Middle Ear," by E. C. Ellett, M.D.

"Simulation of Amaurosis and Amblyopia," by S. Baudry, M.D.

"Manifestations of Syphilis in the Mouth," by L. D. Bulkley, M.D.

"The Dangers of Specialism in Medicine," by L. D. Bulkley, M.D.

"Report of the Nederlandsch Gasthuis voor Ooglijders," June 4, 1898.

"Dynamics of the Extrinsic Ocular Muscles," by F. B. Tiffany, M.D.

"Three Cases of Intracranial Abscess, etc.," by J. F. McKernon, M.D.

"Orthoform and Extract of Suprarenal Glands," by W. Cheatham, M.D.

"Glaucoma With Detachment of the Retina," by W. Cheatham, M.D.

"Surgery in Obstinate Neuralgia of the Mastoid Region," by R. Sattler, M.D.

BOOKS AND PAMPHLETS.

AUGENÆRZTLICHE UNTERICHTSTAFELN FUER DEN AKADEMISCHEN UND SELBSTUNTERICHT (OPHTHALMIC TABLES FOR TEACHERS, ETC.). Edited by Dr. H. Magnus, Breslau. J. U. Kern's Verlag (Max Mueller).

We are in receipt of the following numbers of this collection, to which we have drawn our readers' attention at a former occasion:

No. II. *The Development of Senile Cataract.* By Dr. H. Magnus.

The text, in which the clinical aspect and the pathology of the development of senile cataract is shortly detailed, is illustrated by eleven tables showing the different phases.

No. III. *The Movements of the Eyes in Their Normal and Pathologic Conditions.* By Dr. E. Landolt, Paris.

This is a reproduction of the old and well known chart by Landolt made more useful by some additions in illustrations and text.

No. VII. *The Most Important Tumors of the Eye.* By Dr. A. Vossius, Giessen.

A short description of the more well-known and frequent tumors of the eye, this number also includes tubercle of the choroid. It is accompanied by fourteen tables, not all of which, however, are up to the general excellence of the illustrations in these series.

No. IX. *The Topographic Relations of the Orbit to the Neighboring Cavities of the Skull.* By Dr. H. Czermack, Prag.

Fourteen very instructive tables drawn from frozen specimens illustrate the text of this number.

No. XII. *The Structure and Ophthalmoscopic Appearance of the Chorioidea.* By Dr. R. Greef, Berlin.

In this number the descriptive text is accompanied by a large and two small tables explaining the histology of the choroid in eyes with different amounts of pigment.

We can only reiterate our wish, formerly expressed, that this collection of instructive plates may at some day appear in the English language.

DIE MIKROSKOPISCHEN UNTERSUCHUNGSMETHODEN DES AUGES (THE METHODS OF EXAMINING THE EYE MICROSCOPICALLY). By DR. S. SELIGMANN in Hamburg. Berlin, 1898. S. Karger, Karlstrasse 15. Price, 6 mark.

It is undoubted that this volume will be hailed with great pleasure by all whose work lies in this direction and by the student who wants to take up such work. It contains almost all that a man can know, at this date, about how to examine an eye and its different structures microscopically. If we have any criticism to offer, it is that it contains really too much and may, in consequence, prove bewildering to the beginner. On the other hand, the bacteriological methods are almost totally disregarded. This is decidedly to be regretted, as it would render the otherwise excellent book still more useful.

CLEFT PALATE; TREATMENT OF SIMPLE FRACTURES BY OPERATION; DISEASES OF JOINTS; ANTRECTOMY; HERNIA, ETC. By W. ARBUTHNOT LANE, M. S. London, The Medical Publishing Company. Price, 5 shillings.

This little series of clinical lectures, very nicely and plentifully illustrated, is full of evidences of a wide range of experience and replete with interesting suggestions. We recommend it to our surgical confrères.

AIX-LA-CHAPELLE (AACHEN) AS A HEALTH RESORT. Translated by J. DOULLAN, M.B., M.Ch., B.A.O. London, J. and A. Churchill.

A very extensive description of this well known health resort. We are especially interested in the part written by the late Dr. L. Alexander on the affections of the eyes whose large experience in the treatment of eye diseases, due to syphilis, is known to all our readers. ALT.